JAN 21 2005
PATENT & TRADEMARK OFFICE

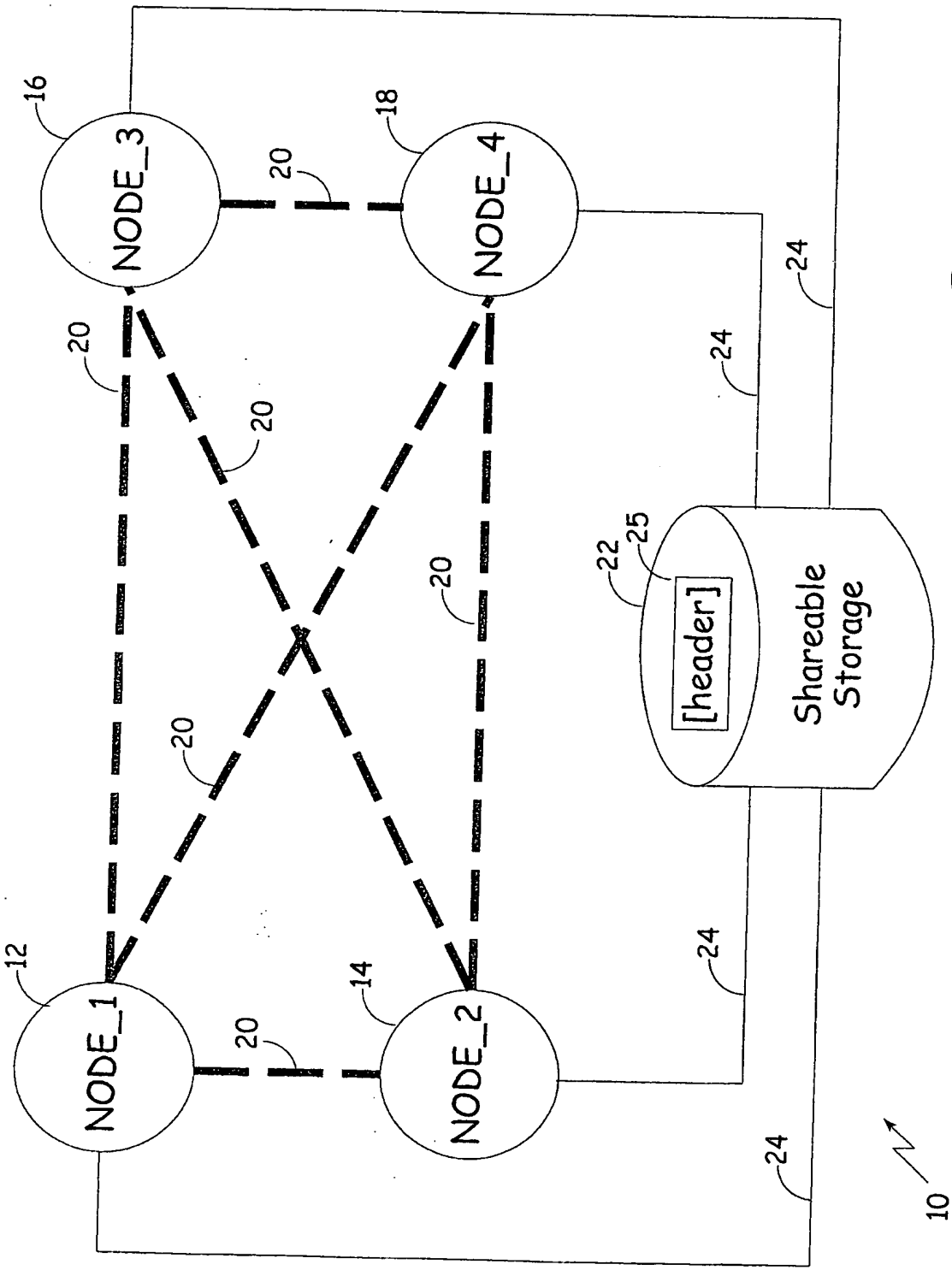
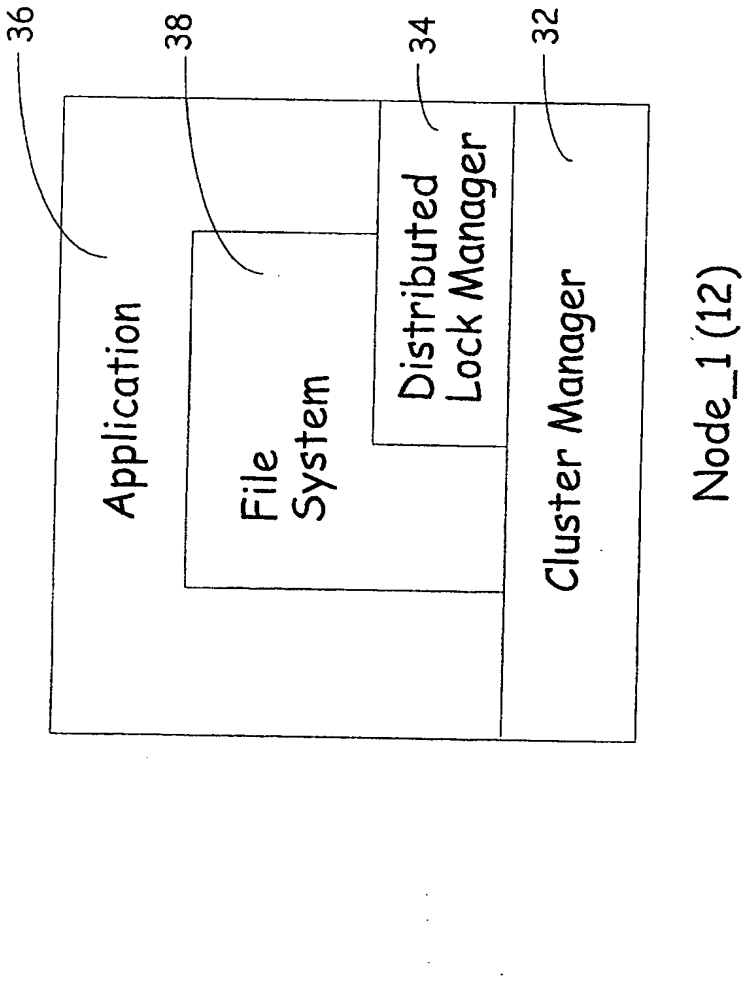


FIG. 1

FIG. 2


36
38
34
32
Application
File System
Distributed Lock Manager
Cluster Manager
Node_1 (12)
30

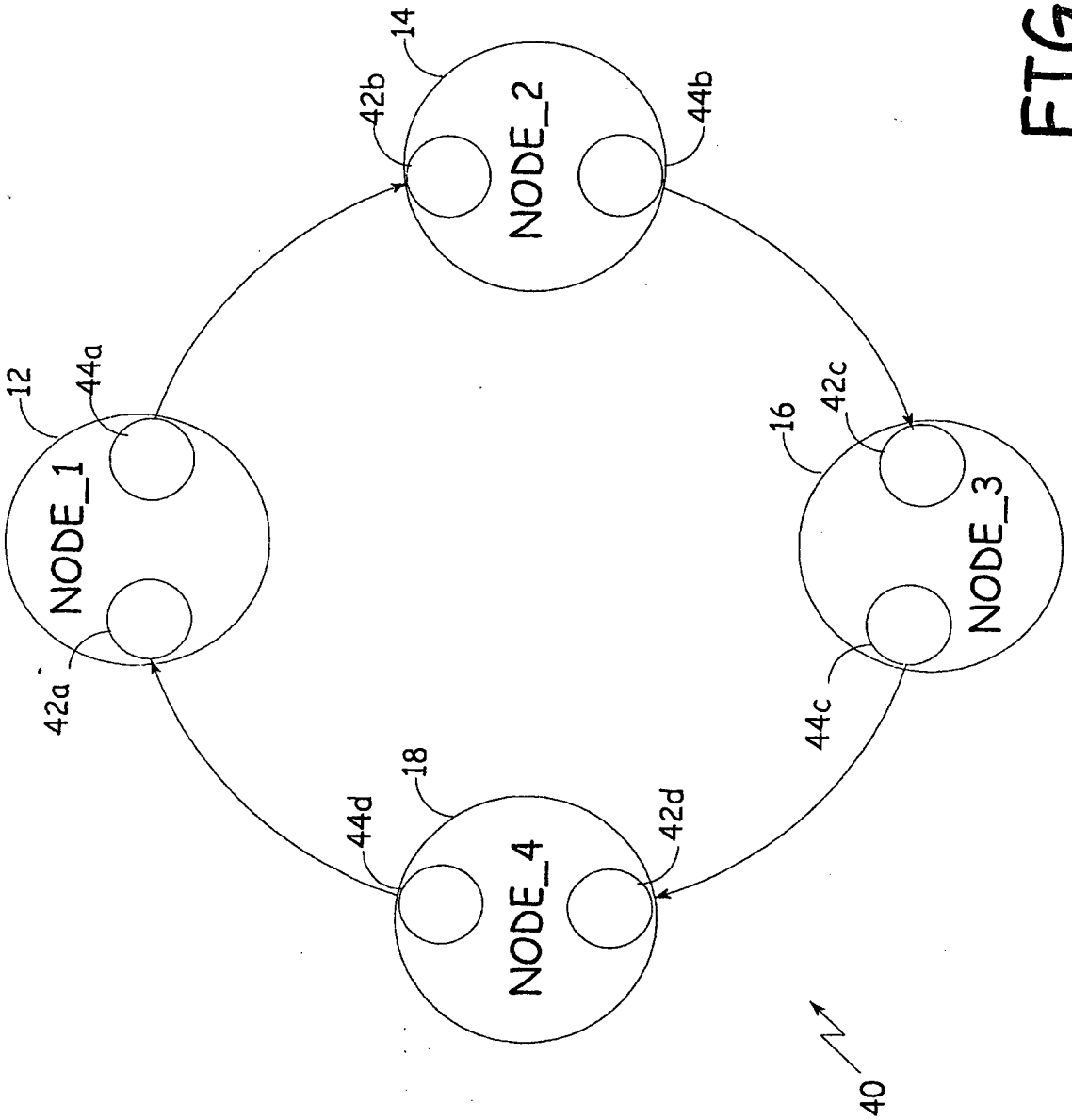

NODE_1
NODE_2
NODE_3
NODE_4
12
14
16
18
42a
42b
42c
42d
44a
44b
44c
44d
40

FIG. 3

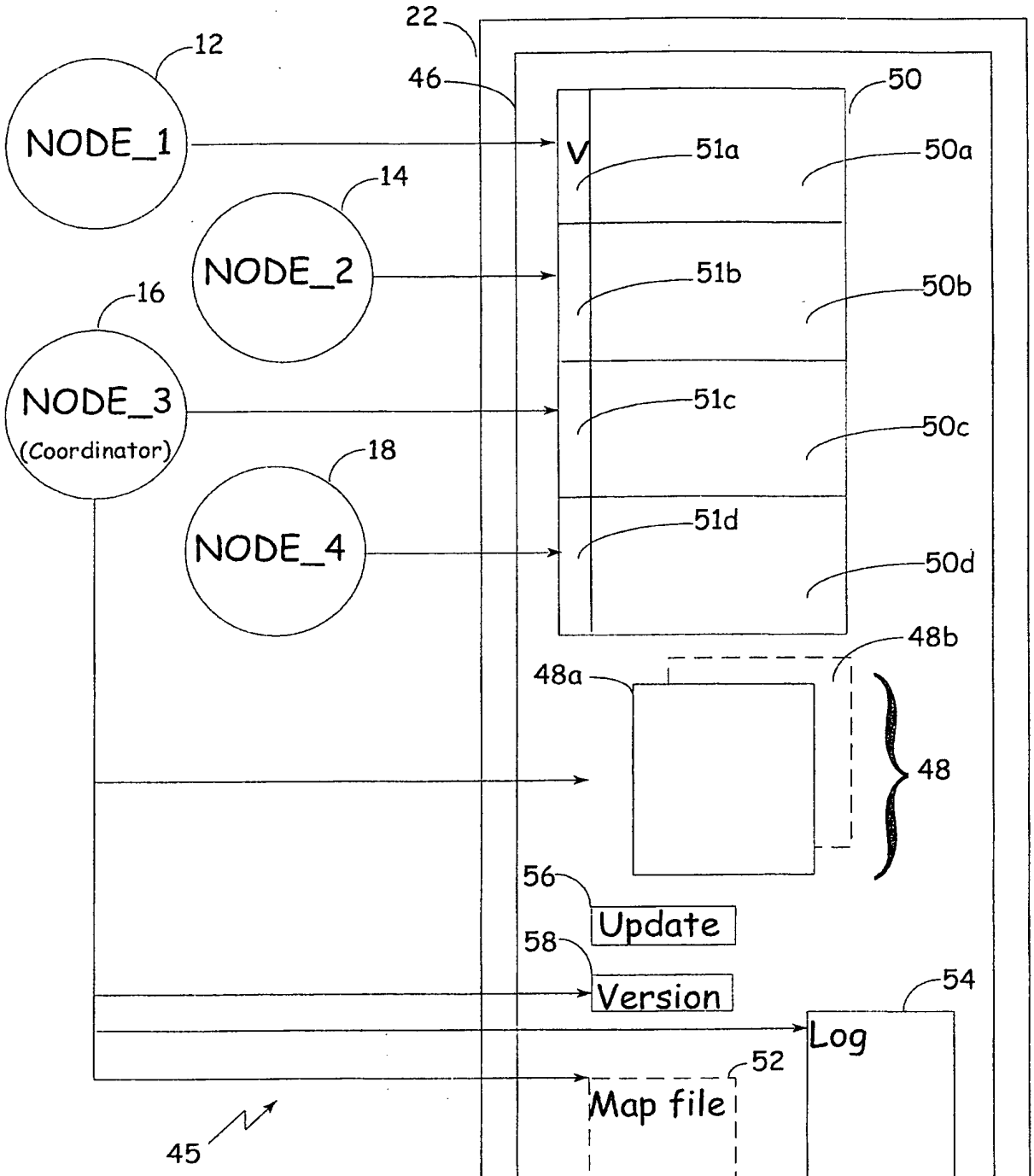

22
12
46
50
NODE_1
V
51a
50a
14
NODE_2
51b
50b
16
NODE_3
(Coordinator)
51c
50c
18
NODE_4
51d
50d
48b
48a
48
56
Update
58
Version
54
Log
52
Map file
45

FIG. 4

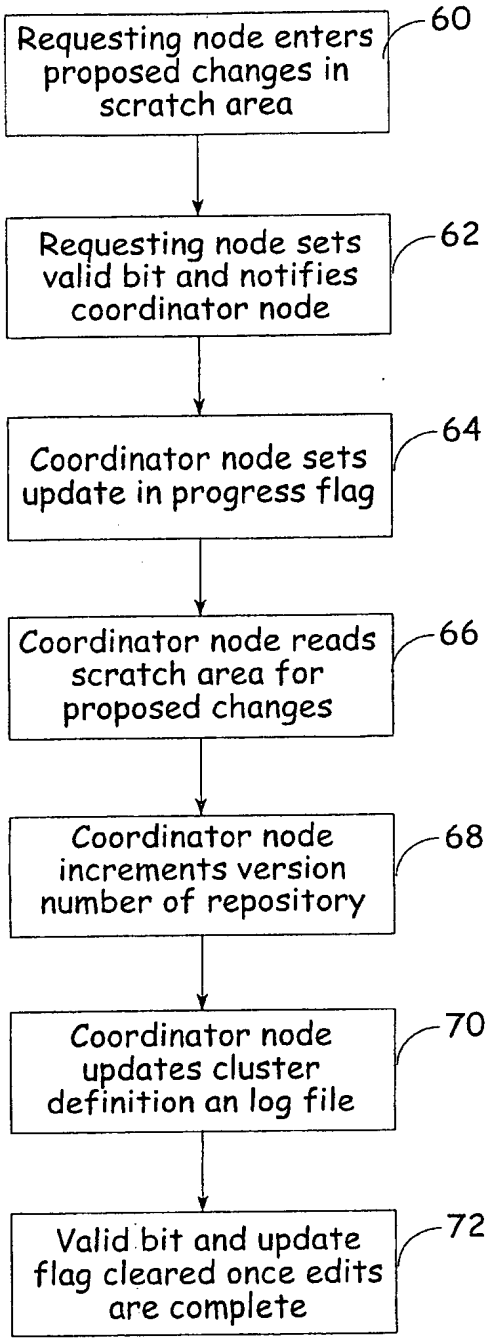

Requesting node enters proposed changes in scratch area
60
Requesting node sets valid bit and notifies coordinator node
62
Coordinator node sets update in progress flag
64
Coordinator node reads scratch area for proposed changes
66
Coordinator node increments version number of repository
68
Coordinator node updates cluster definition an log file
70
Valid bit and update flag cleared once edits are complete
72

FIG. 5

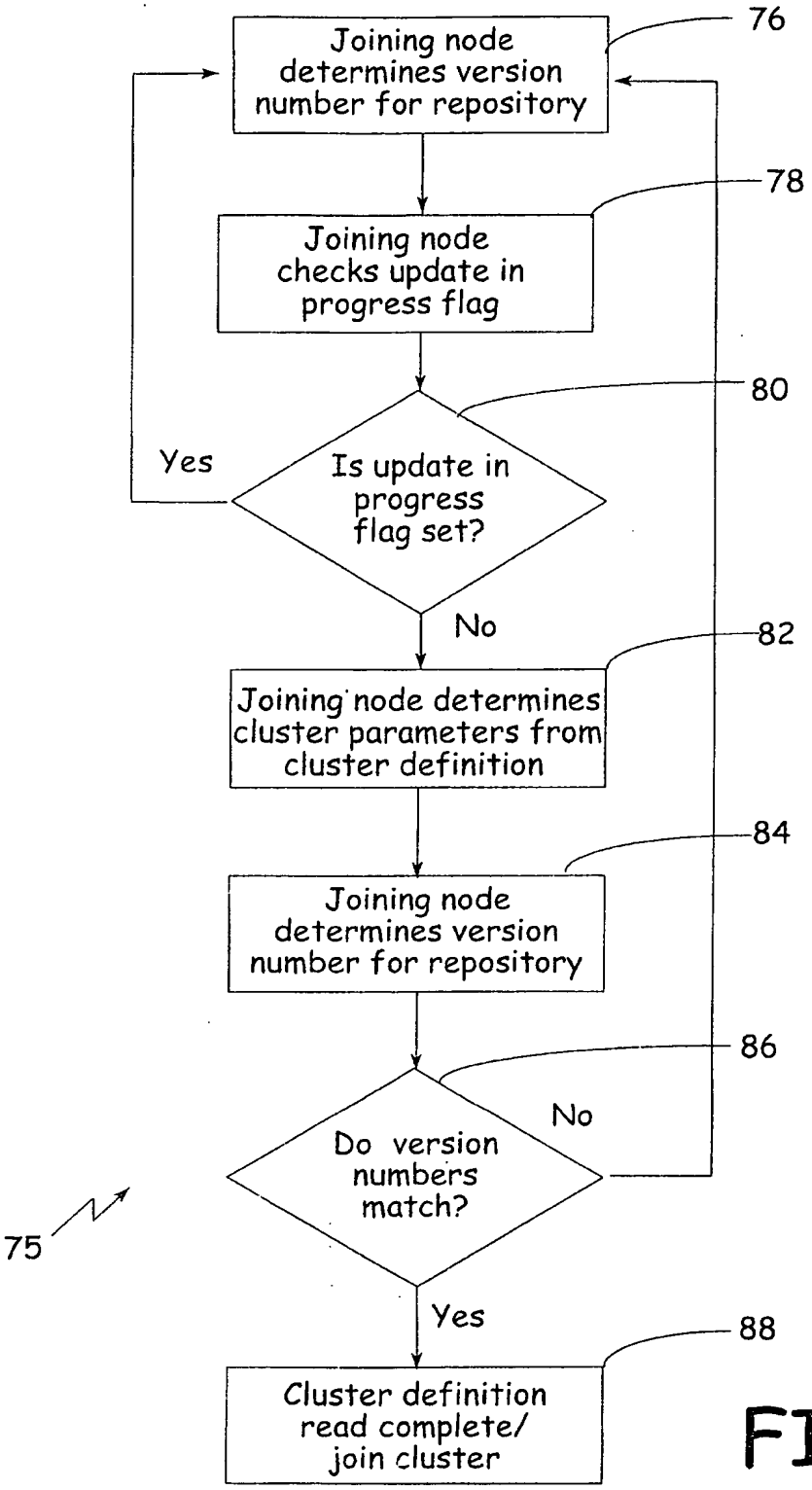

Joining node determines version number for repository
76
Joining node checks update in progress flag
78
Is update in progress flag set?
80
Yes
No
Joining node determines cluster parameters from cluster definition
82
Joining node determines version number for repository
84
Do version numbers match?
86
No
Yes
Cluster definition read complete/ join cluster
88
75

FIG. 6

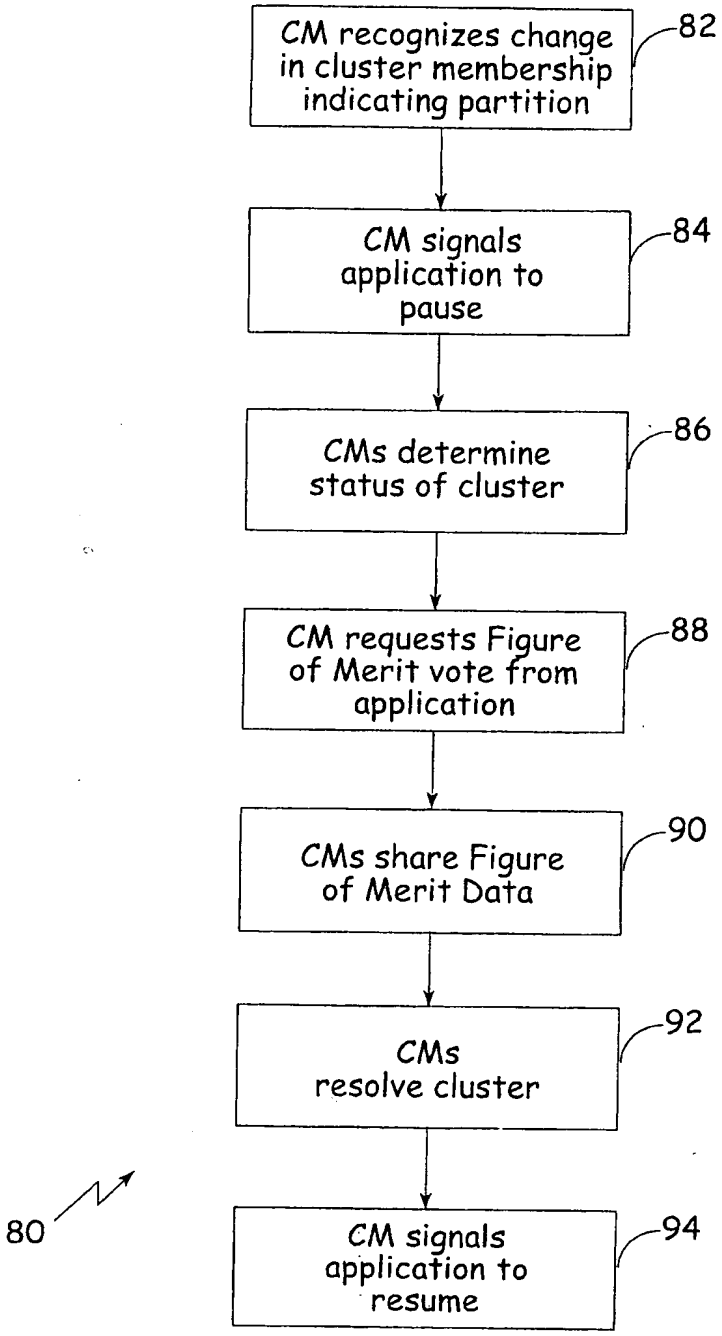

CM recognizes change in cluster membership indicating partition
82
CM signals application to pause
84
CMs determine status of cluster
86
CM requests Figure of Merit vote from application
88
CMs share Figure of Merit Data
90
CMs resolve cluster
92
CM signals application to resume
94
80

FIG. 7